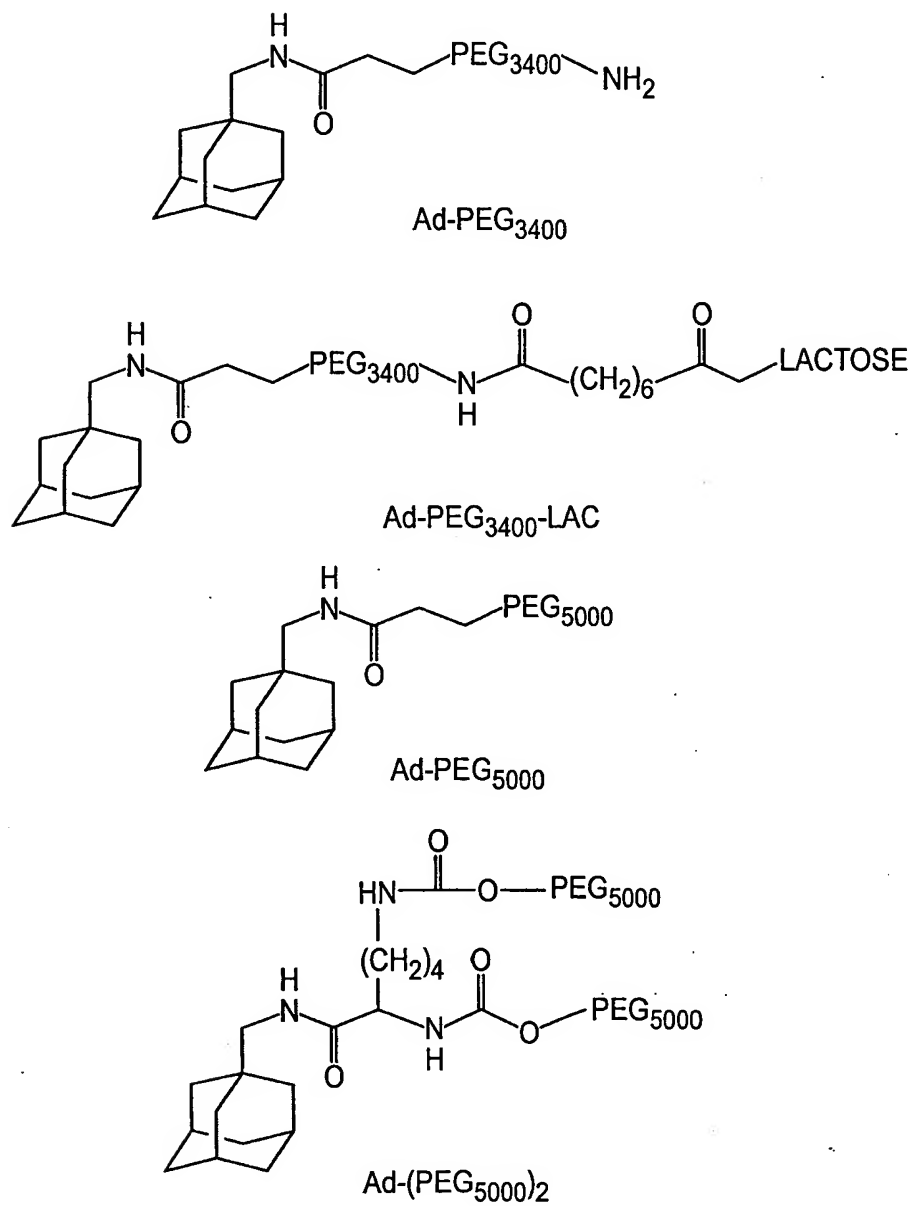


STRUCTURES OF VARIOUS ADAMANTANE-PEG MOLECULES.

**FIG. 1**

HYDRODYNAMIC DIAMETER OF GALA (DASHED LINE) AND
GALA-Ad (SOLID LINE)-MODIFIED POLYPLEXES.

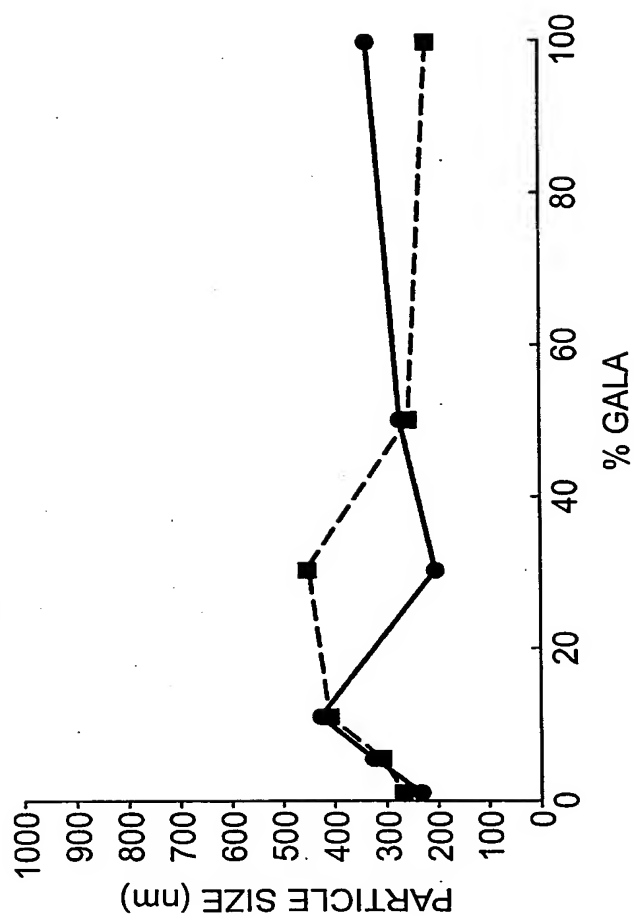


FIG. 2

ZETA POTENTIAL OF GALA (DASHED LINE) AND
GALA-Ad (SOLID LINE)-MODIFIED POLYPLEXES.

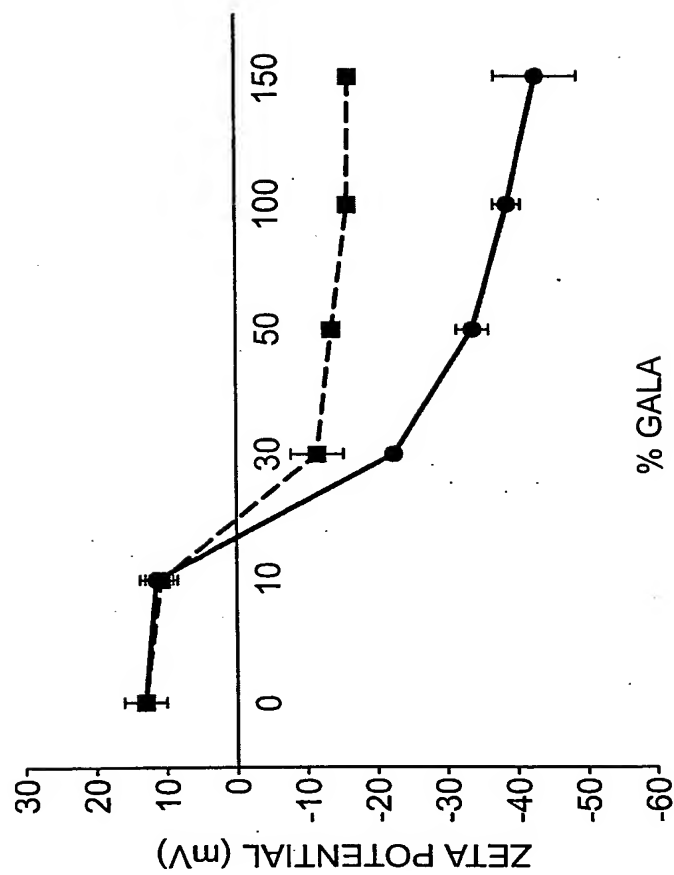
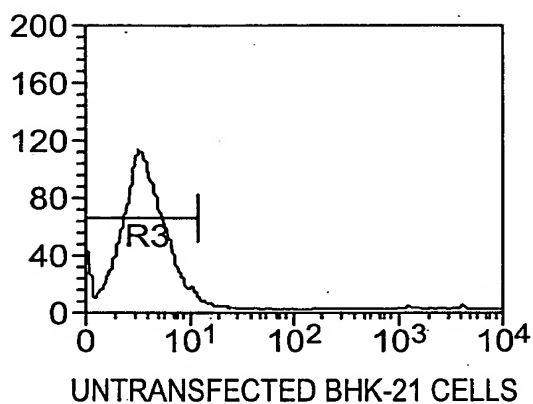
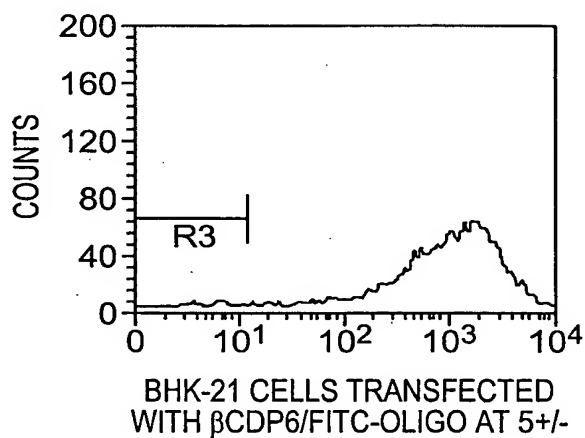
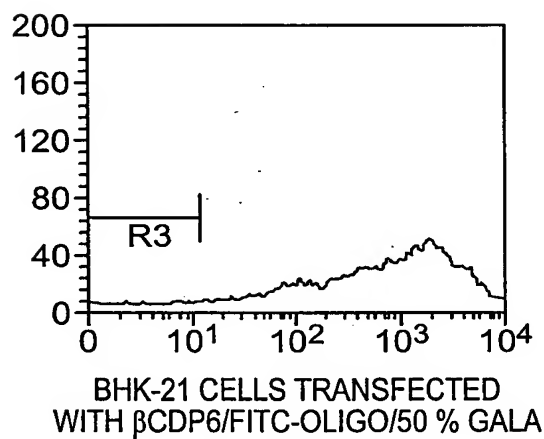
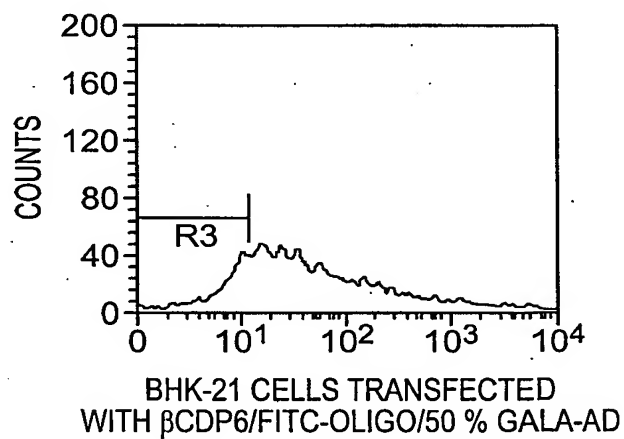
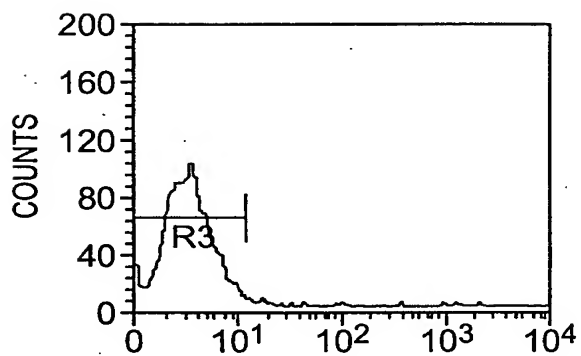


FIG. 3

UPTAKE OF GALA-Ad AND GALA MODIFIED
POLYPLEXES BY BHK-21 CELLS.**FIG. 4A****FIG. 4B****FIG. 4C****FIG. 4D****FIG. 4**

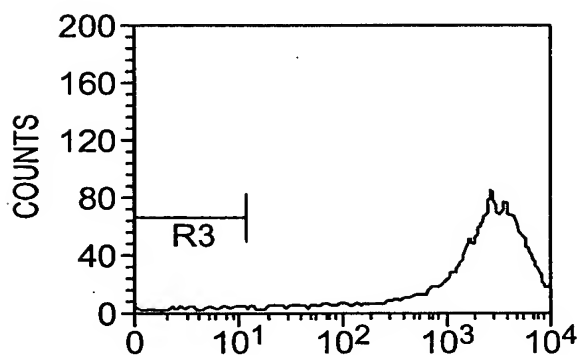
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UPTAKE OF GALA-Ad AND GALA MODIFIED
POLYPLEXES BY HUH-7 CELLS



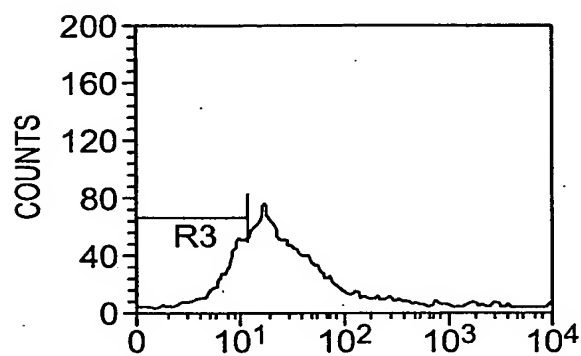
UNTRANSFECTED HUH-7 CELLS

FIG. 5A



HUH-7 TRANSFECTED WITH
 β CDP6/FITC-OLIGO AT 5+/-

FIG. 5B



HUH-7 TRANSFECTED WITH
 β CDP6/FITC-OLIGO/ 50 % GALA-Ad

FIG. 5C

FIG. 5

LUCIFERASE TRANSFECTION OF BHK-21 CELLS WITH β CDP-BASED POLYPLEXES
MODIFIED WITH GALA (SHADED BARS) AND GALA-Ad (WHITE BARS).

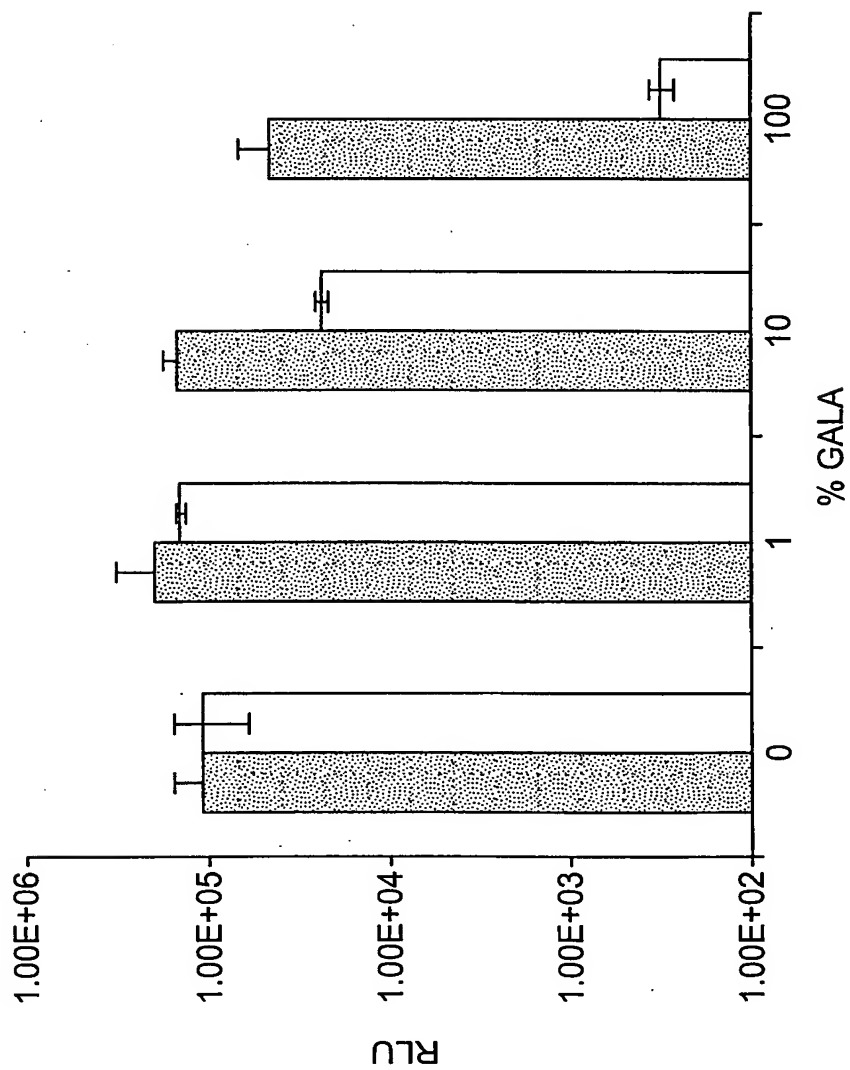


FIG. 6

TOXICITY OF GALA AND GALA-Ad MODIFIED POLYPLEXES TO BHK-21 CELLS.

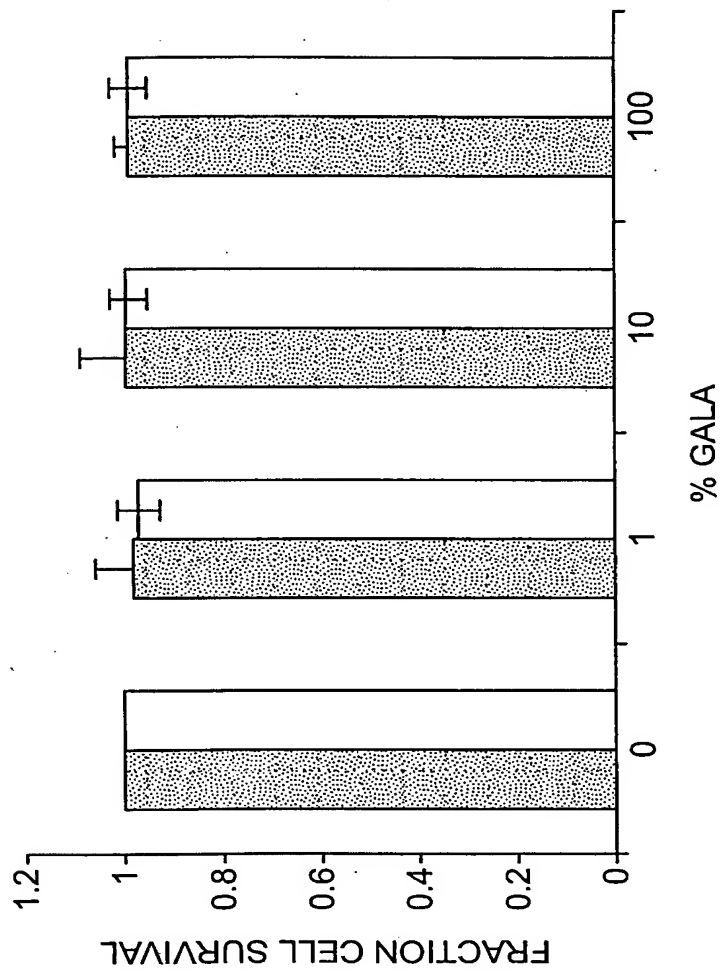
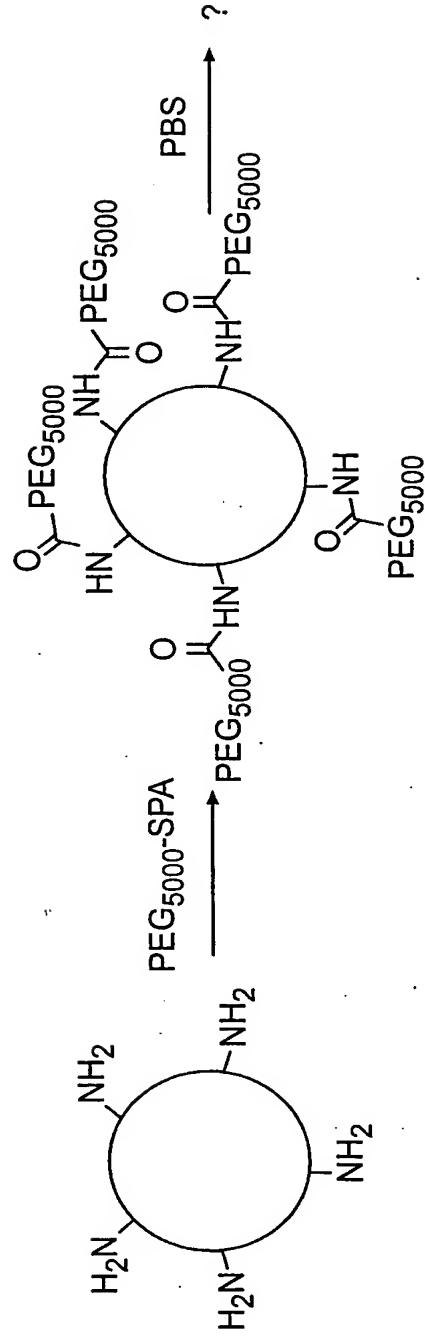


FIG. 7

SCHEME FOR POST-DNA-COMPLEXATION PEGYLATION BY GRAFTING.



STAGE 1

FIG. 8

PARTICLE SIZES OF PEI AND 12 (β CDP6) POLYPLEXES DURING
POST-DNA-COMPLEXATION PEGYLATION OF GRAFTING.

POLYPLEX	PEG	STAGE 1 (nm)	STAGE 2 (nm)	STAGE 3 (nm)
PEI 3+/-	10:1	58	65	115
PEI 6+/-	10:1	55	60	78
β CDP6 5+/-	100%	70	67.4	303
β CDP6 5+/-	150%	70	X*	N/A
β CDP6 5+/-	200%	70	X*	N/A
β CDP6 5+/-	100% PEG**	67	81	700

*POOR CORRELATION FUNCTION; NO SIZE MEASUREMENTS POSSIBLE.

**PEG₅₀₀₀ ADDED INSTEAD OF PEG₅₀₀₀-SPA

FIG. 9

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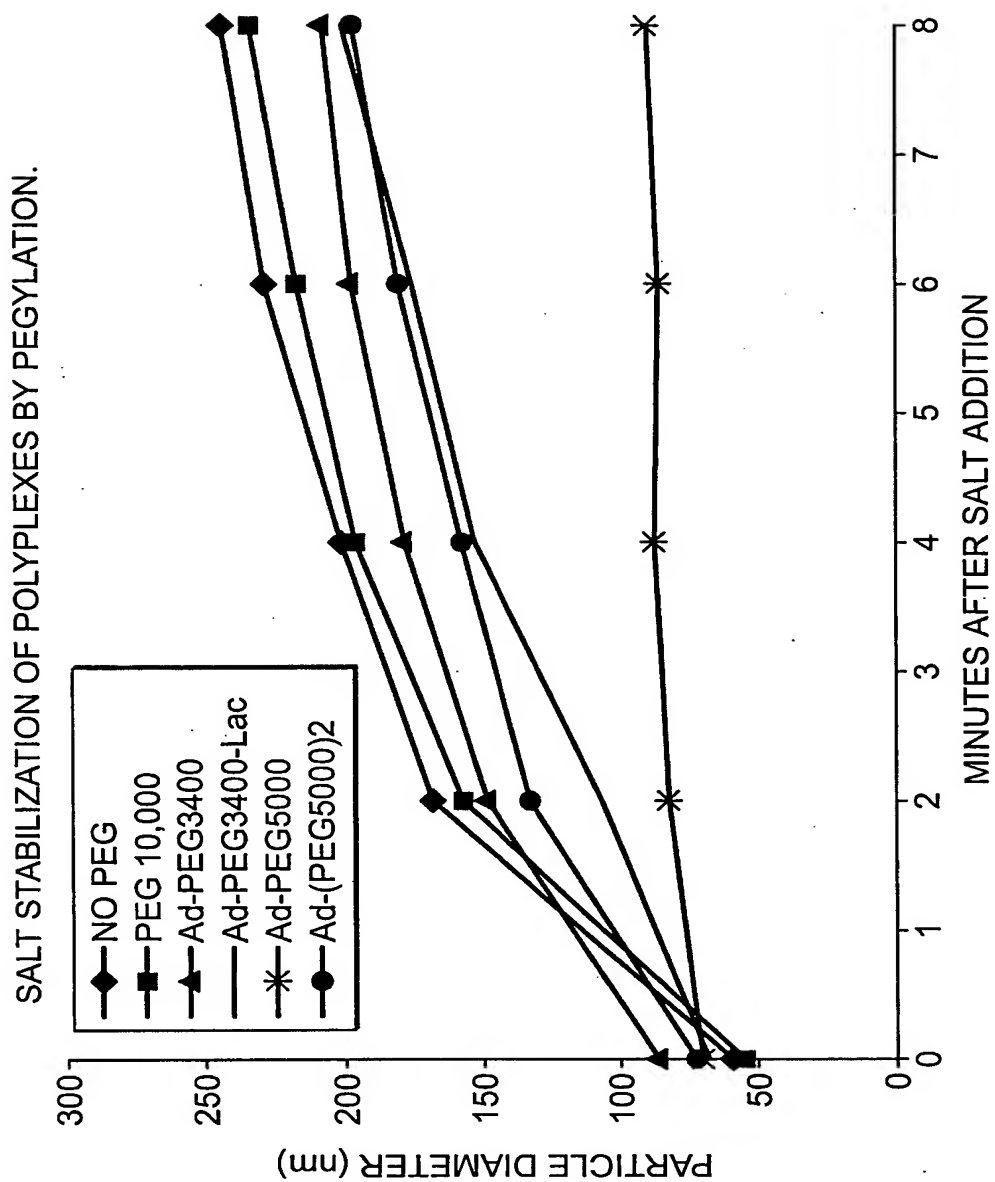


FIG. 10

STABILIZATION OF POLYPLEXES BY PEGYLATION.

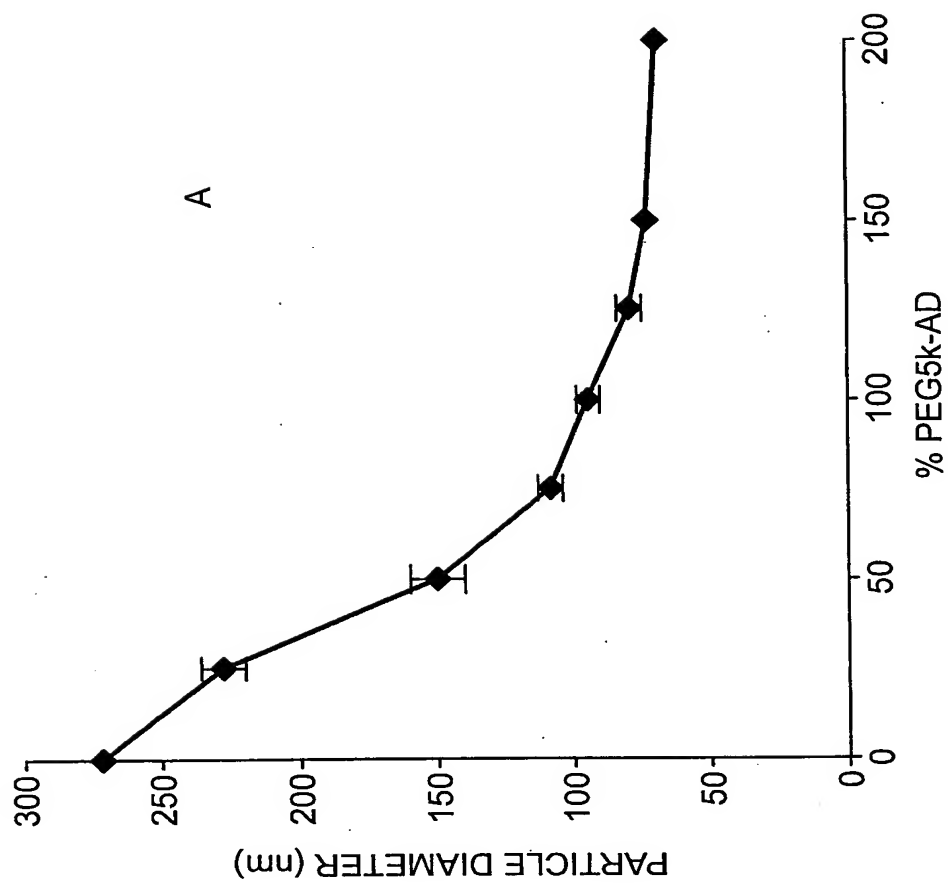
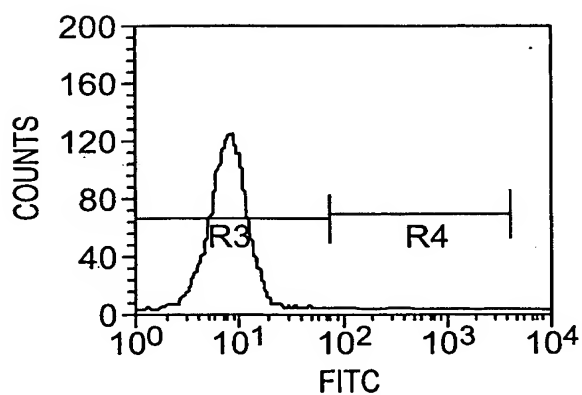


FIG. 10A

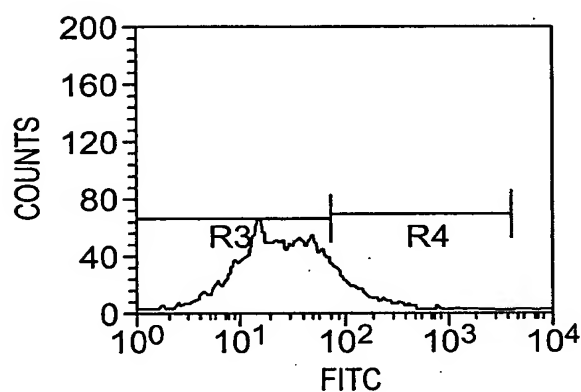
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CO-DELIVERY OF β CDP6 POLYPLEXES WITH PEG₃₄₀₀-FITC.



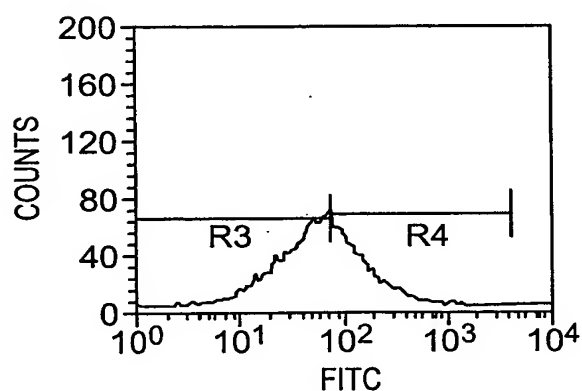
UNTRANSFECTED HUH-7

FIG. 11A



HUH-7 TRANSFECTED WITH
 β CDP6/OLIGO + FREE PEG₃₄₀₀-FITC

FIG. 11B

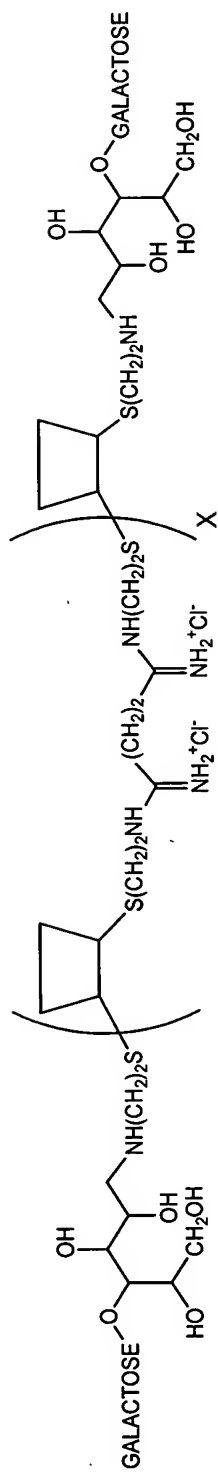


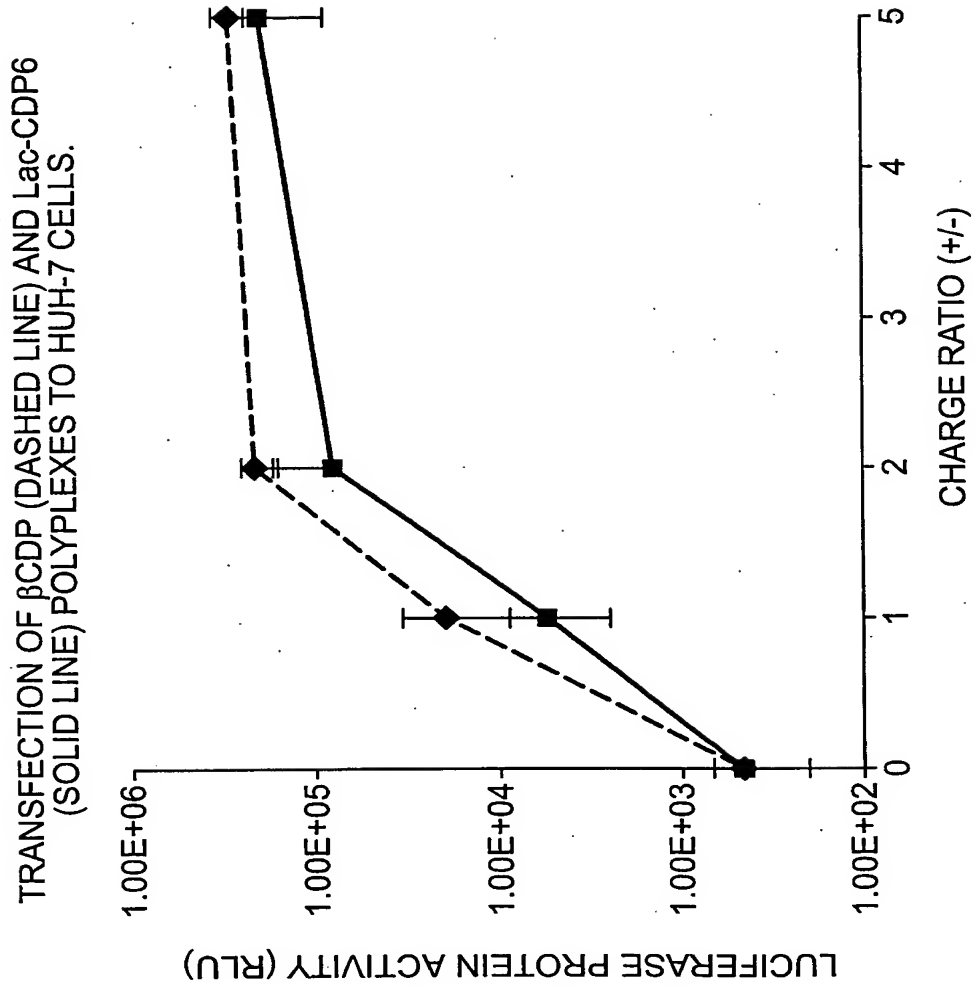
HUH-7 TRANSFECTED WITH
 β CDP6/OLIGO/Ad-PEG₃₄₀₀-FITC

FIG. 11C

FIG. 11

STRUCTURE OF LACTOSE-CDP6

**FIG. 12**

**FIG. 13**

SCHEMATIC OF EXPERIMENTAL PROTOCOL, EXAMPLE 47

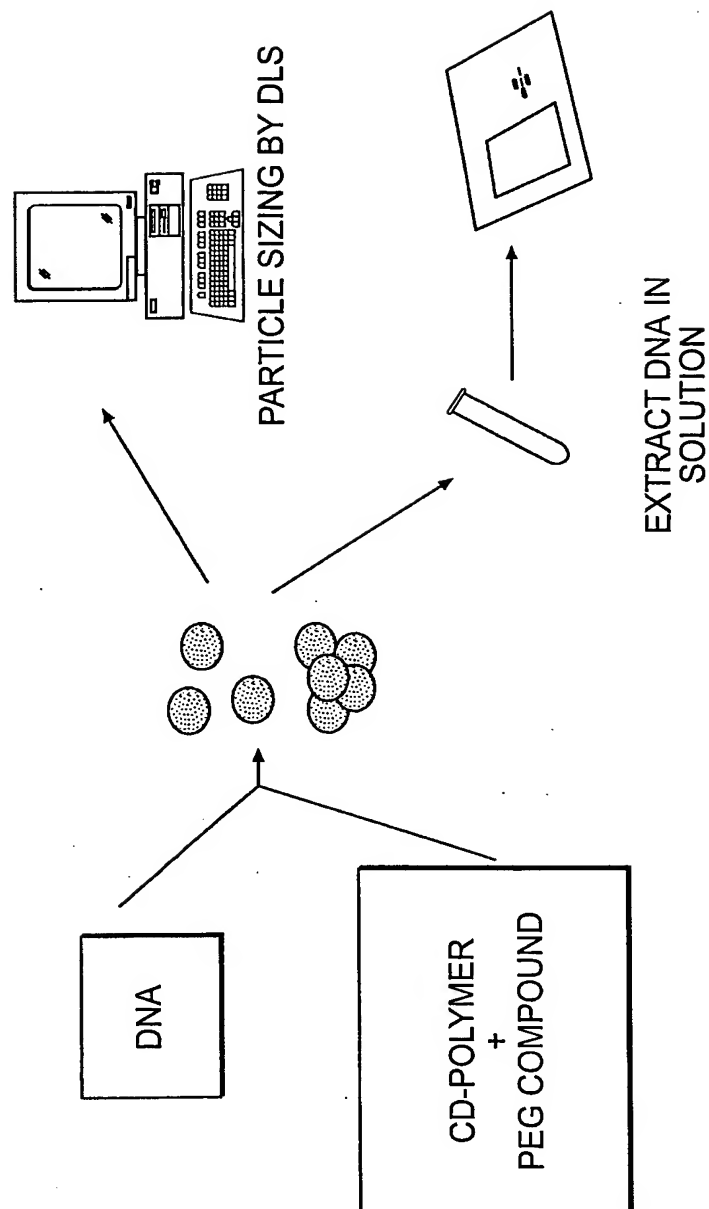


FIG. 14

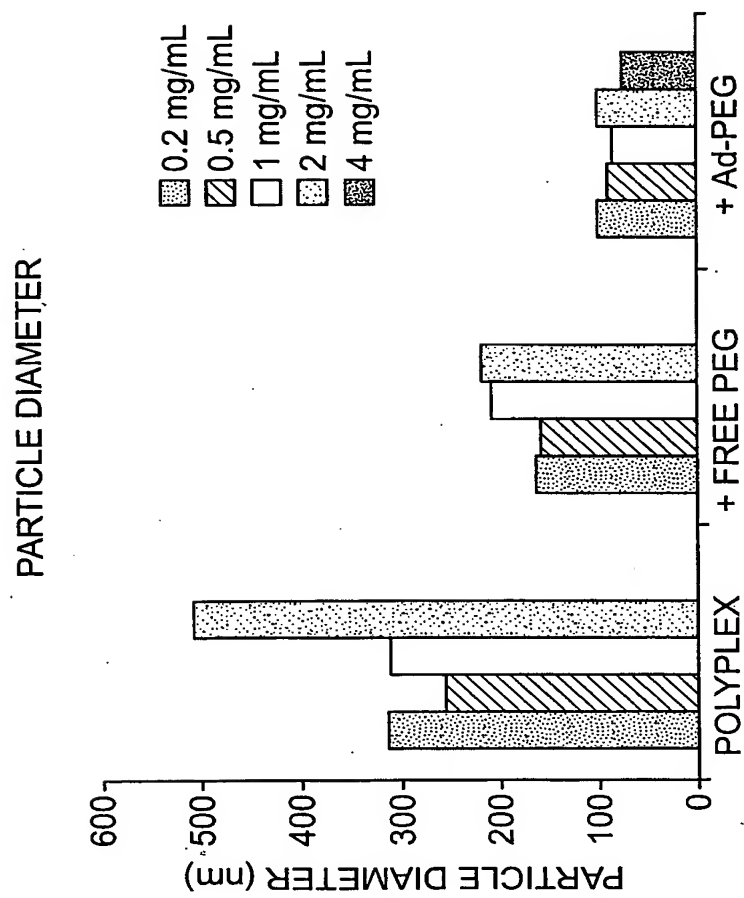
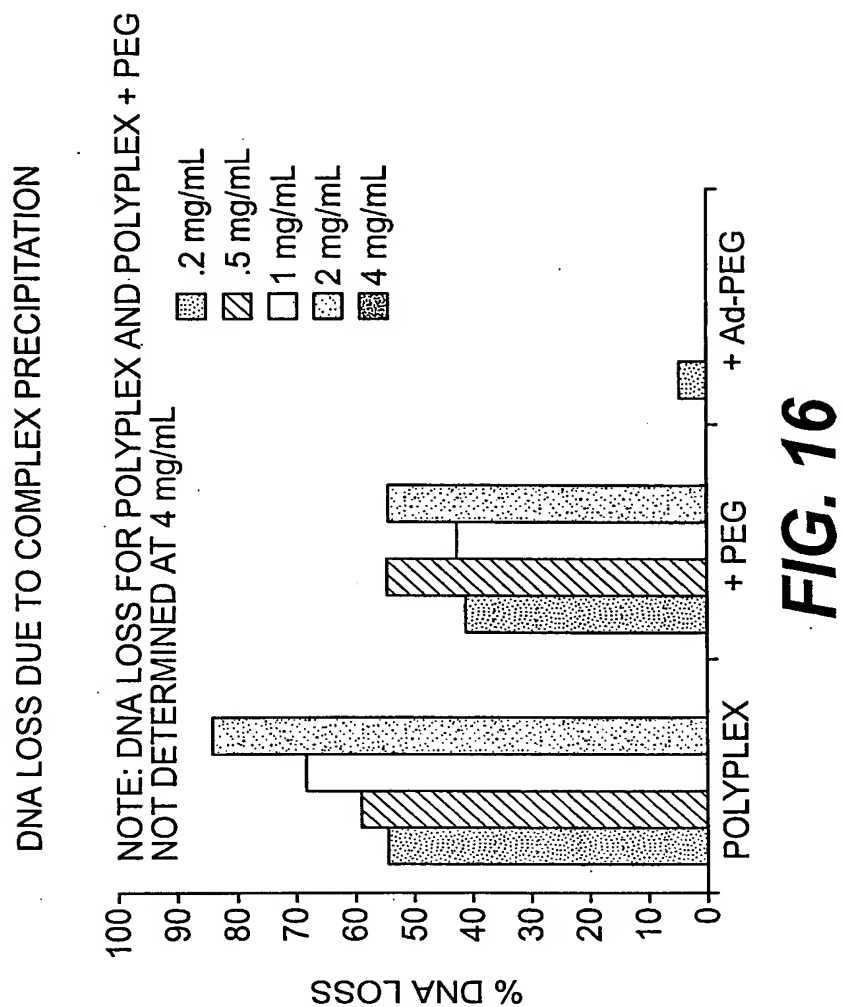
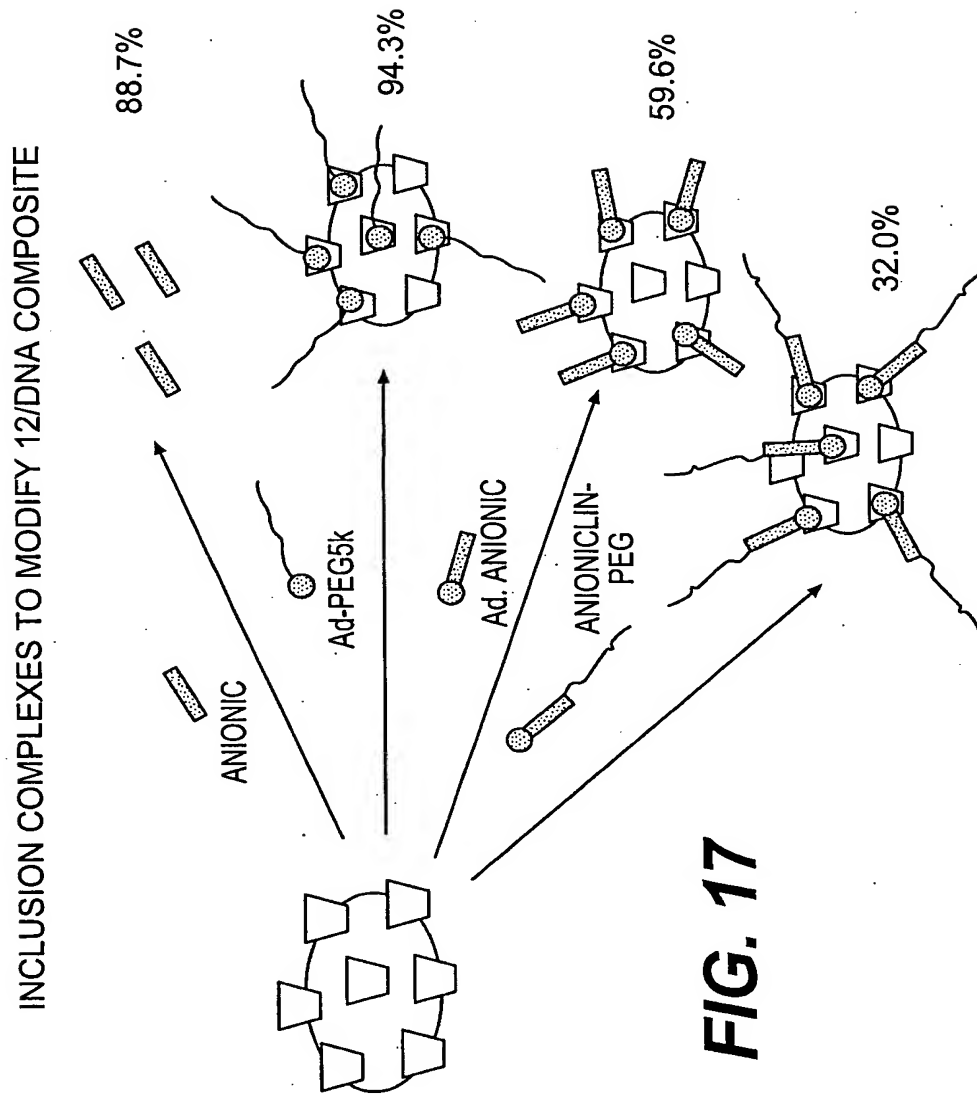
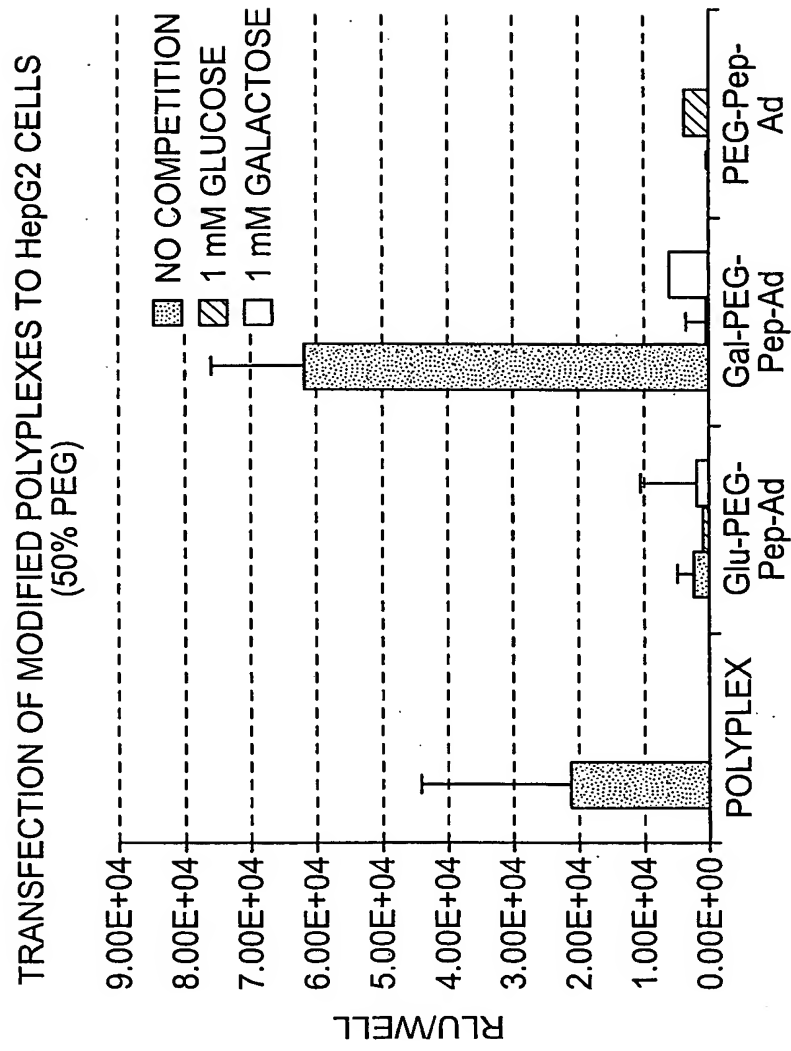


FIG. 15





**FIG. 18**

COMPETITIVE DISPLACEMENT EXPERIMENTS

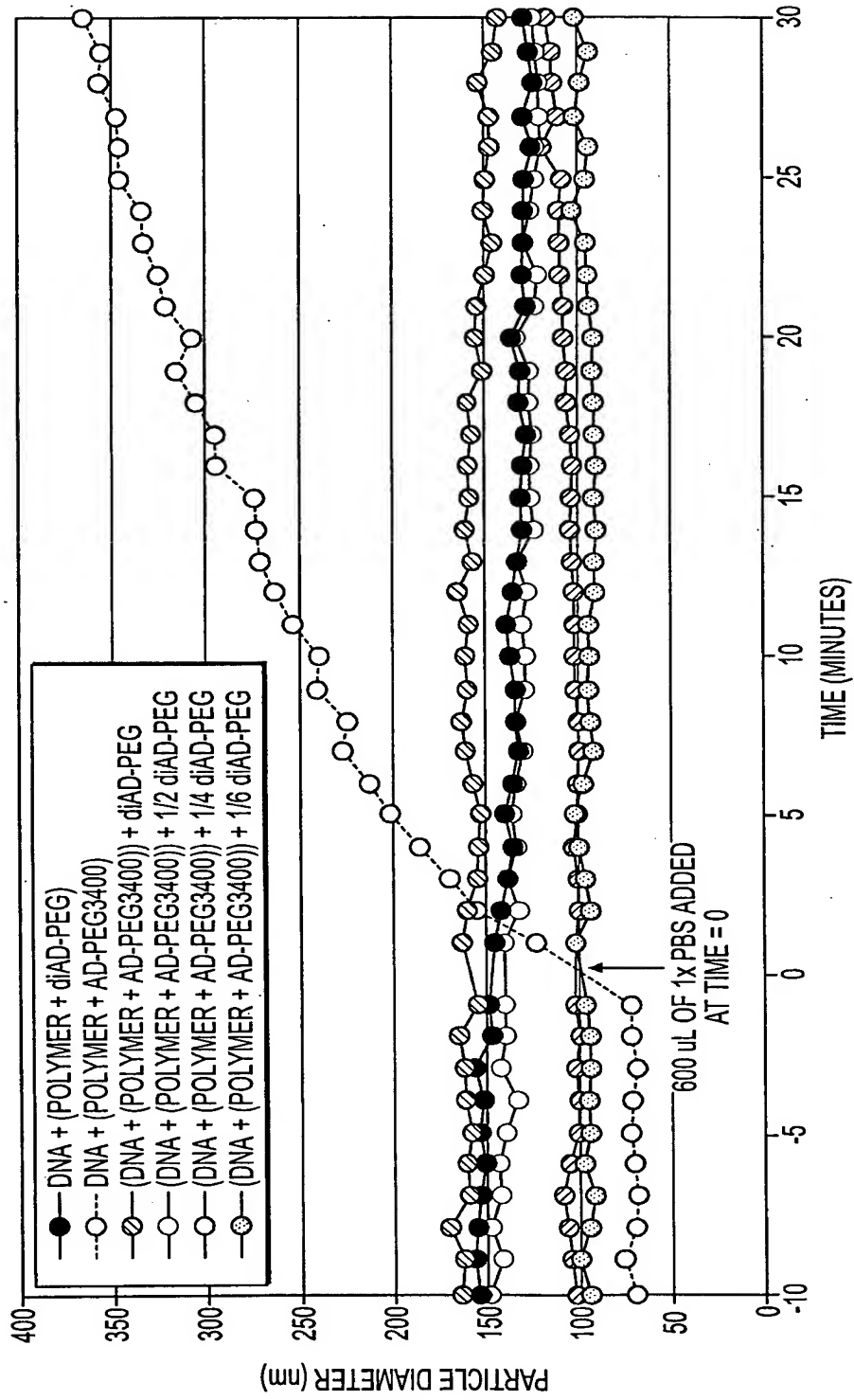
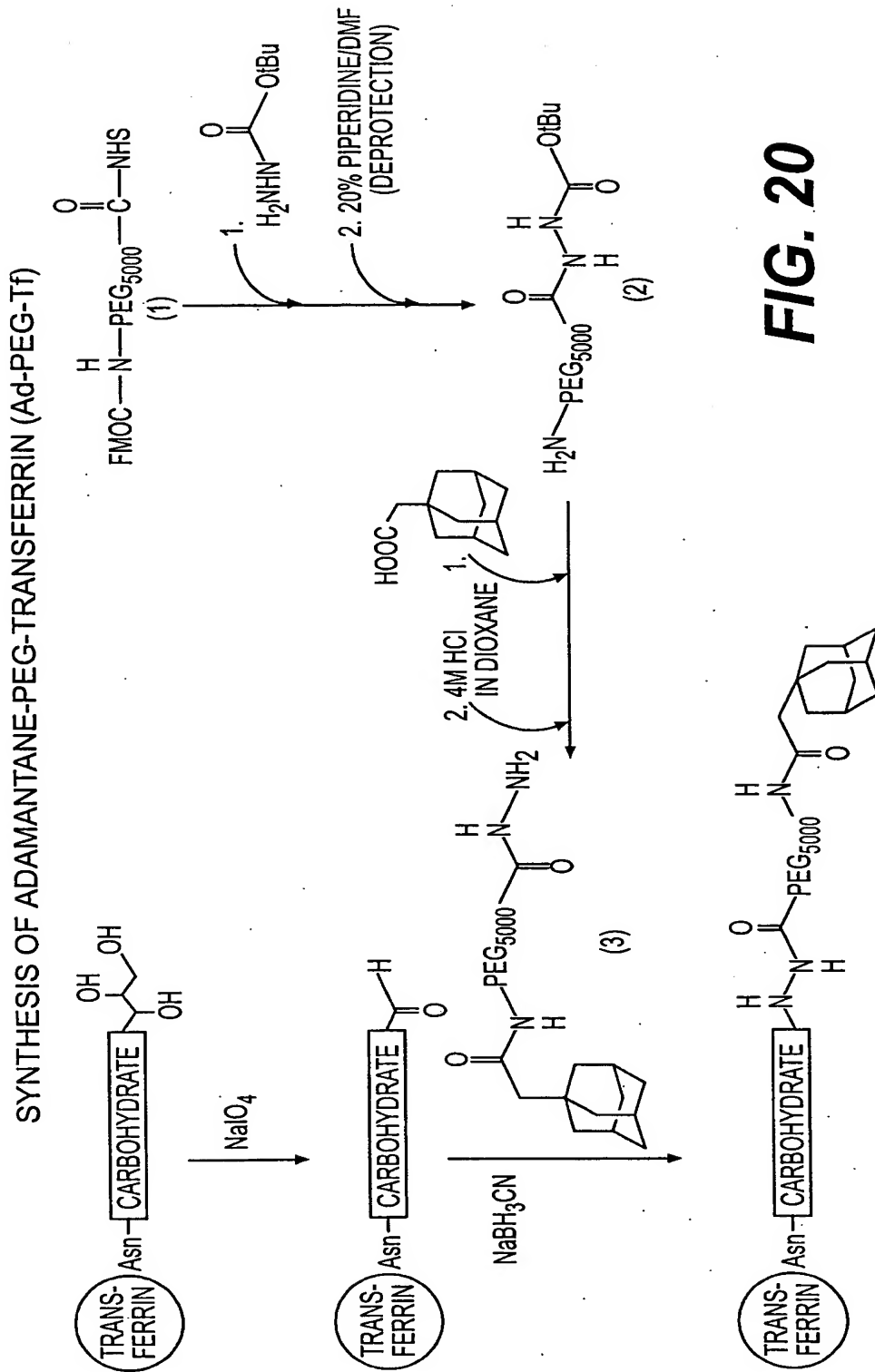
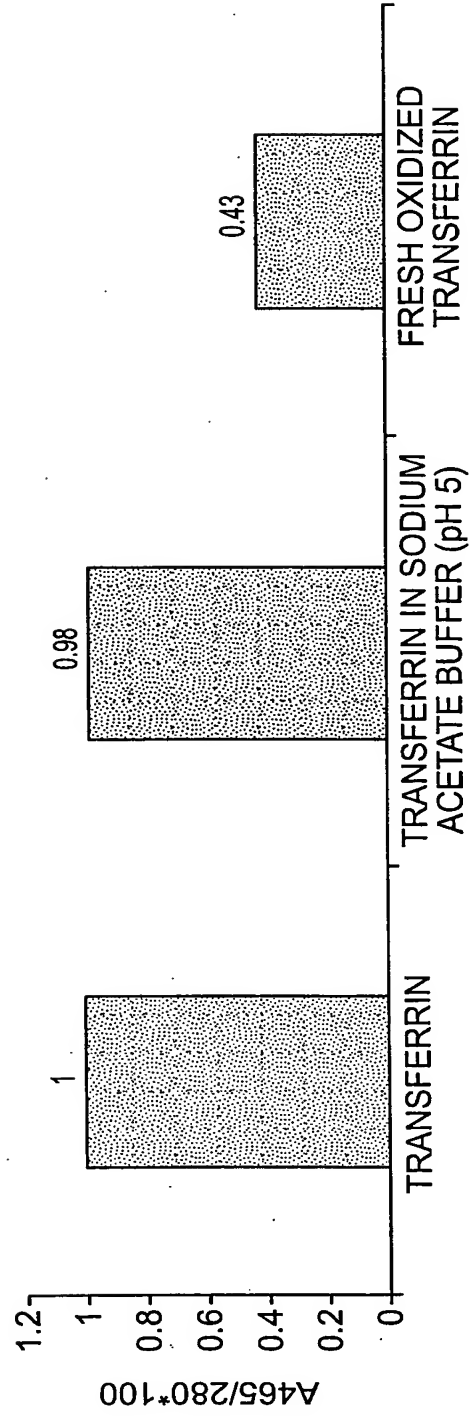
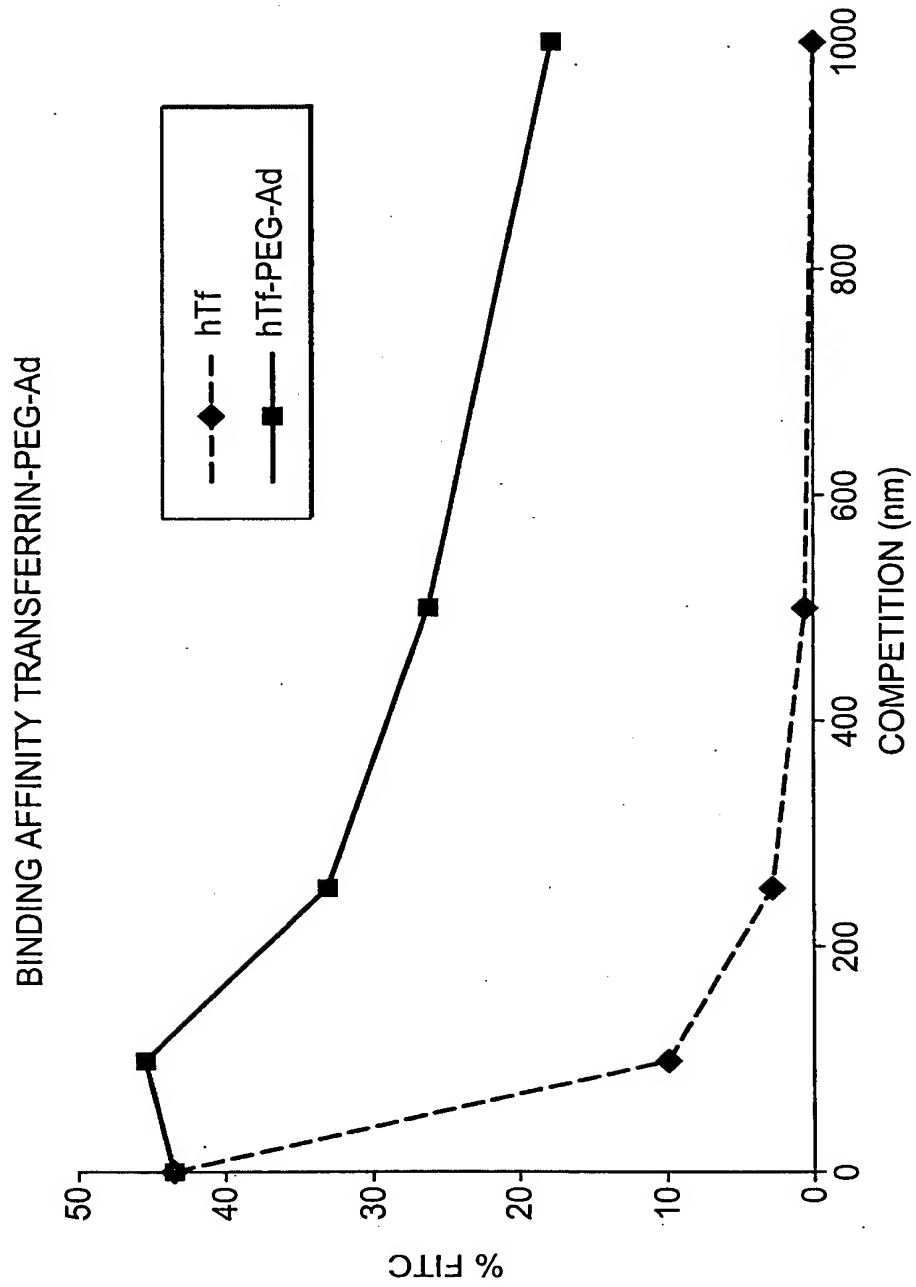


FIG. 19



IRON LOADING OF TRANSFERRIN

**FIG. 21**

**FIG. 22**

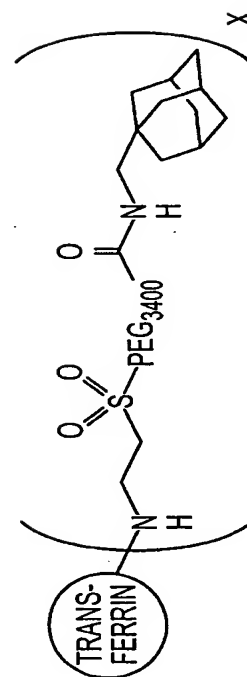
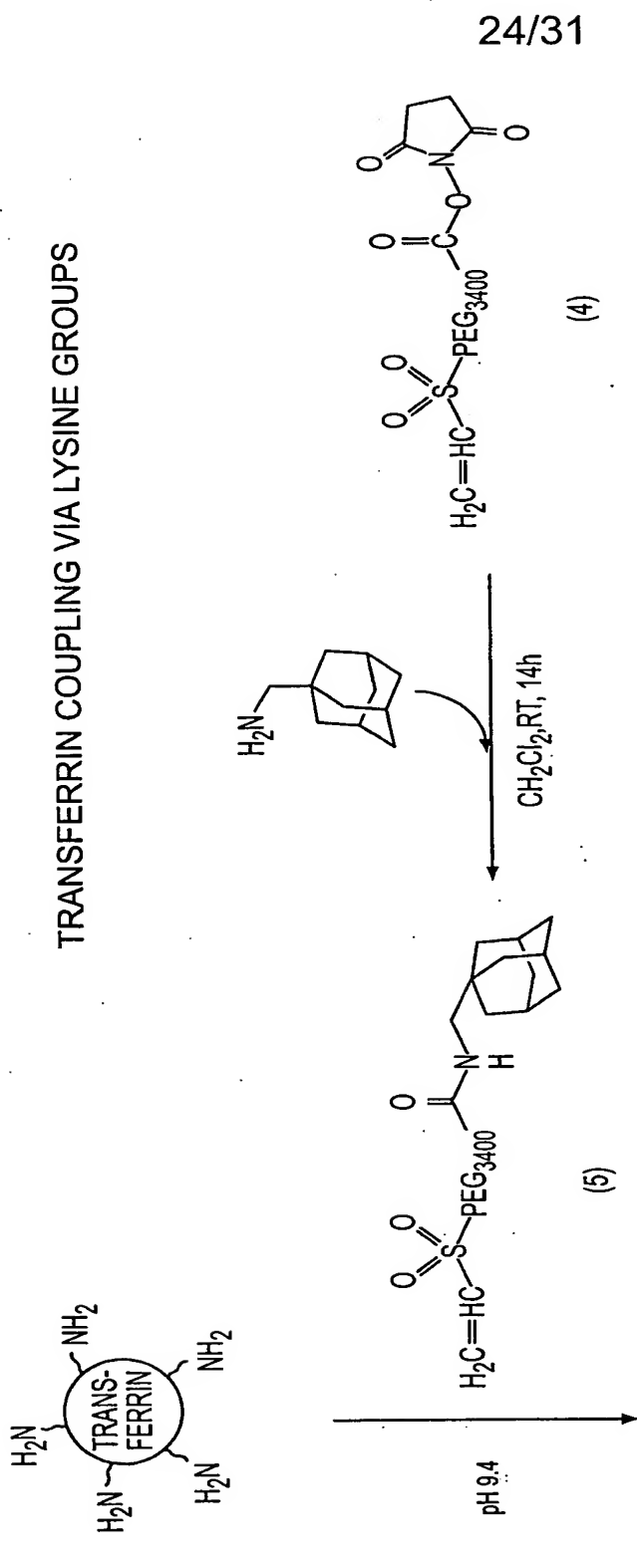
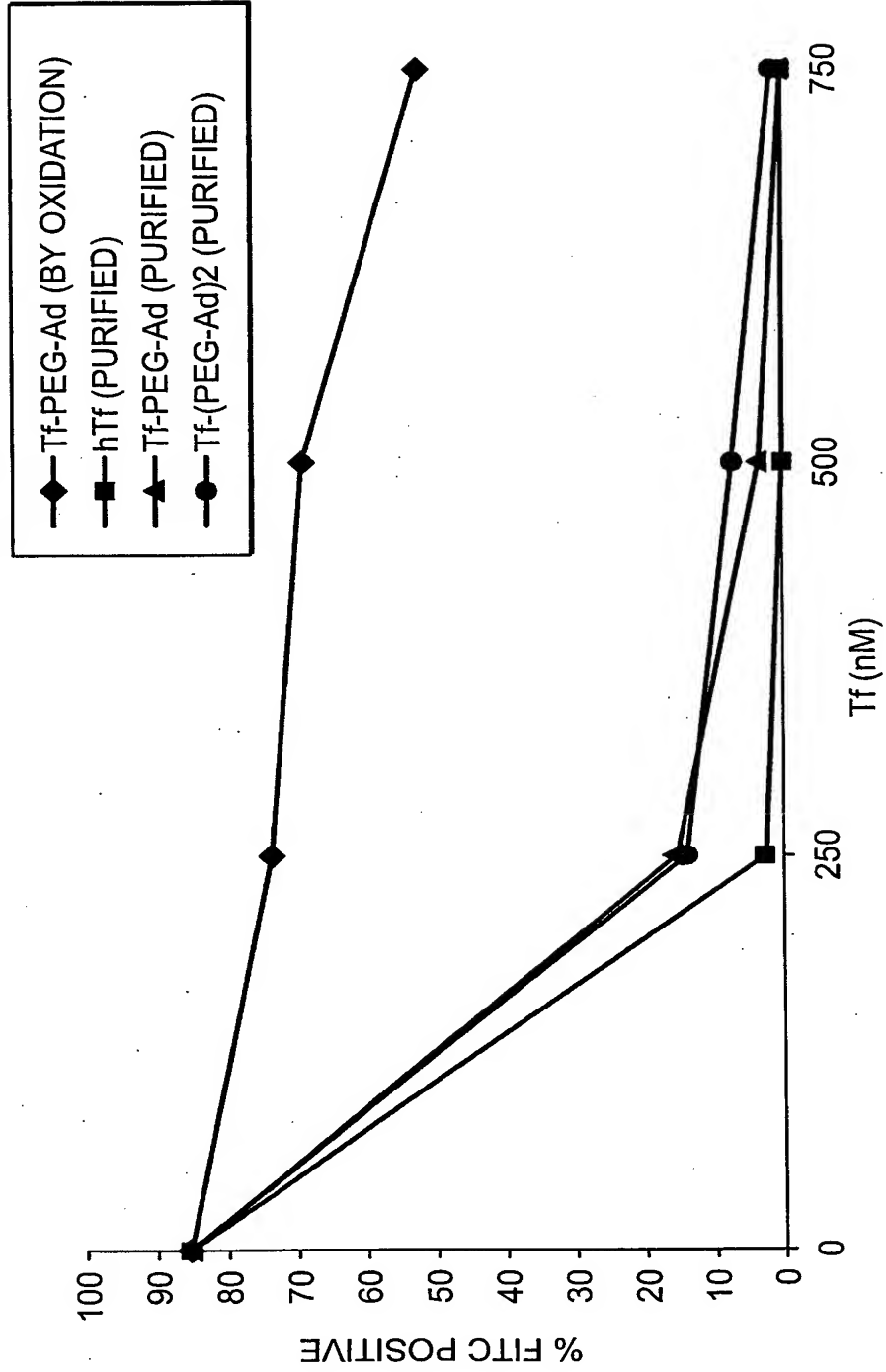


FIG. 23

BINDING AFFINITY OF TRANSFERRIN-PEG-AD TO
TRANSFERRIN RECEPTORS ON PC3 CELLS**FIG. 24**

ZETA POTENTIAL VARIATION AND PARTICLE SIZE AS A FUNCTION OF PARTICLE MODIFICATION IN TRANSFERRIN AND PEG-MODIFIED POLYPLEXES

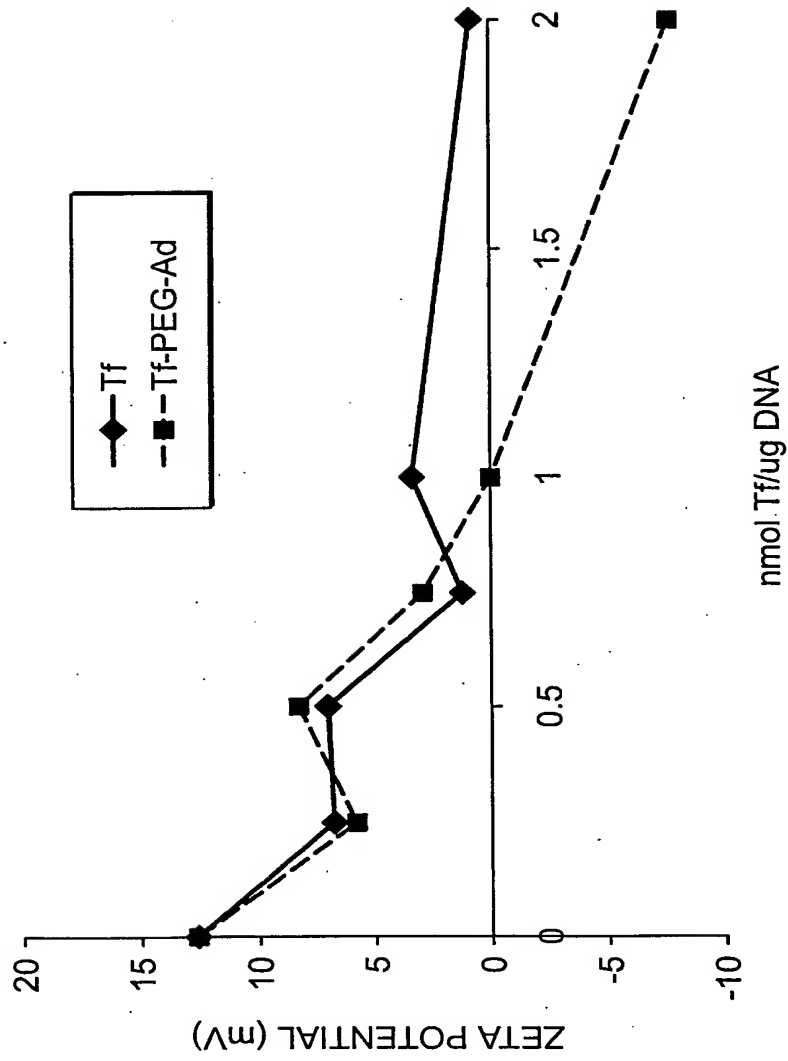


FIG. 25

ZETA POTENTIAL MEASUREMENTS, Ad-ANIONIC-PEG

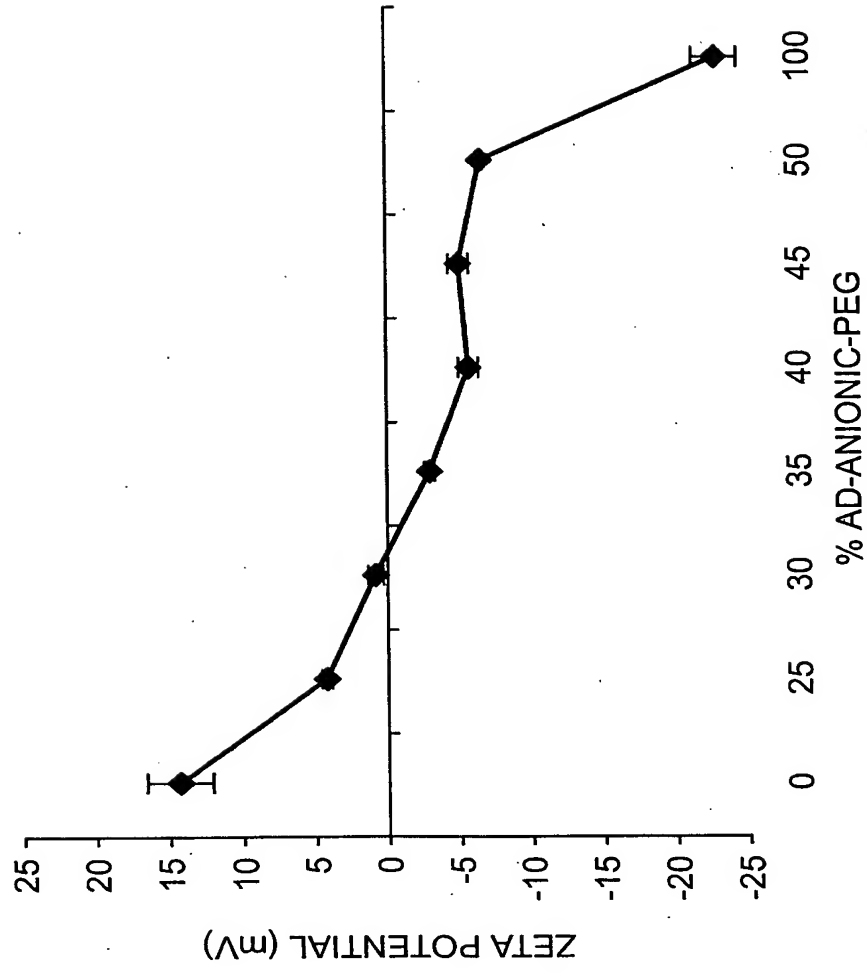


FIG. 26

STABILITY IN 150mM PBS USING Ad-PEG
1mg/ml DNA, 3+/- CDP

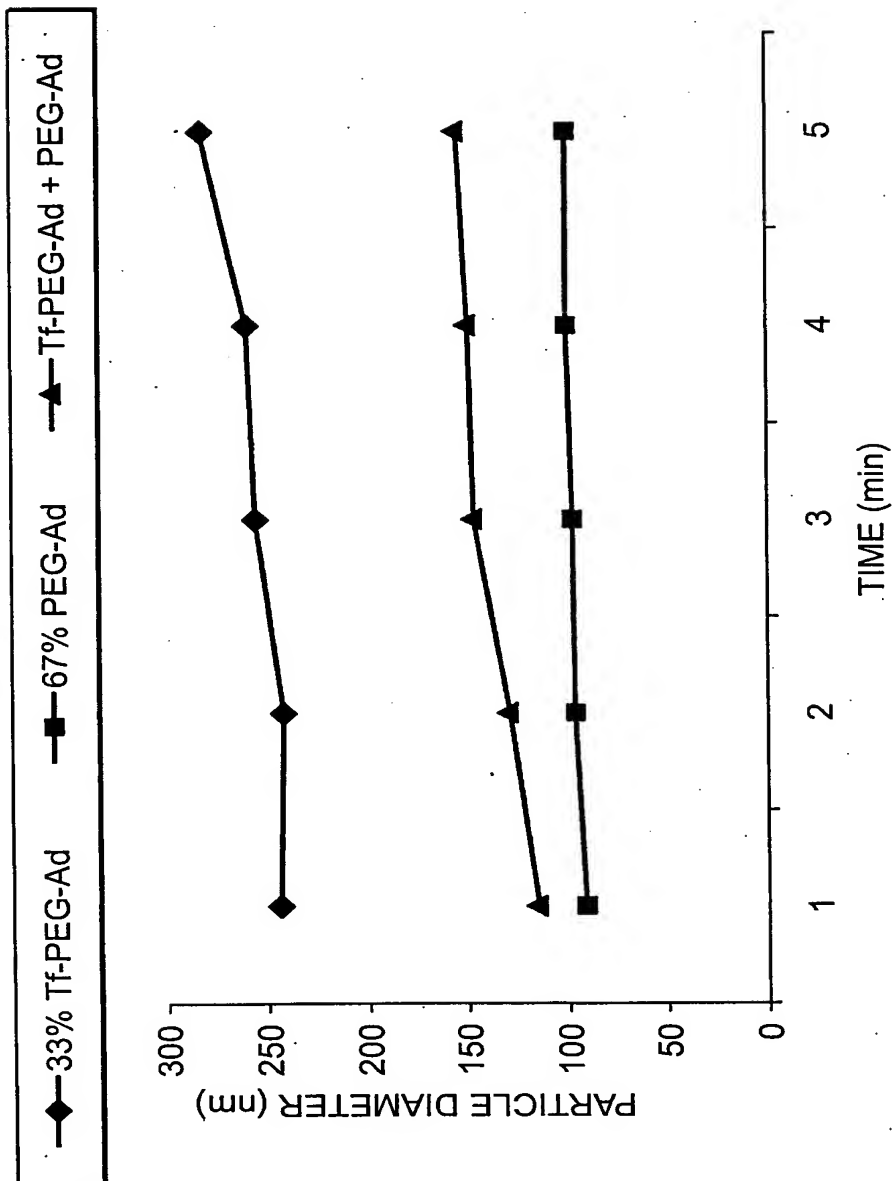
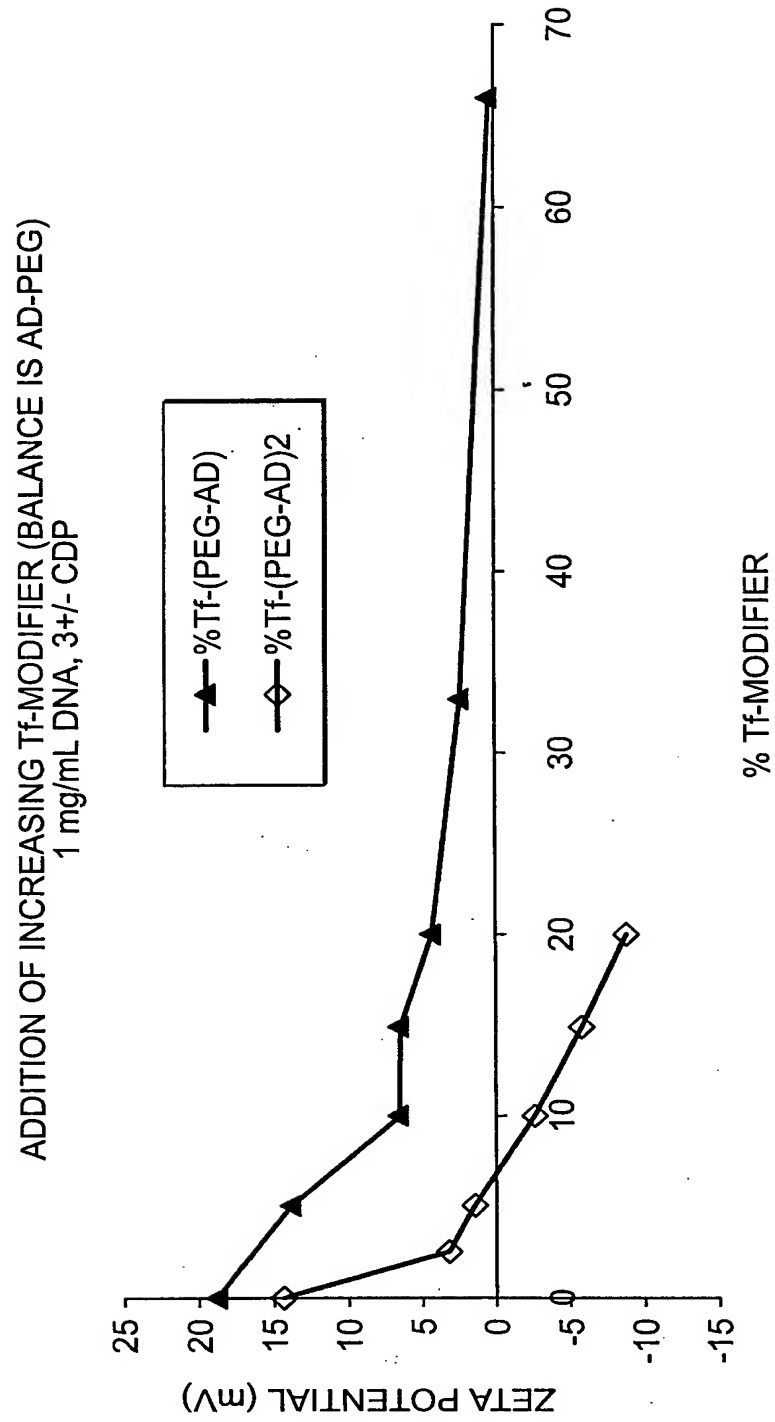


FIG. 27

**FIG. 28**

SYNTHESIS OF HISTIDYLATED β CDP6

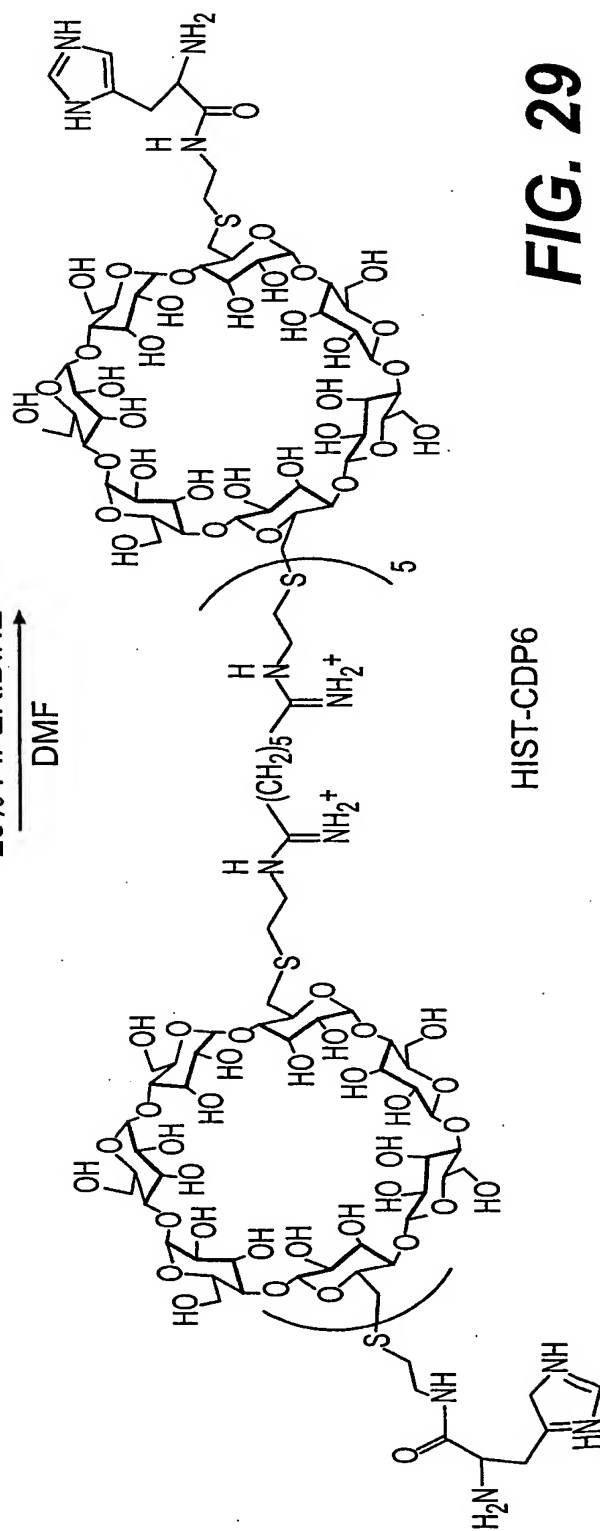
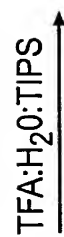
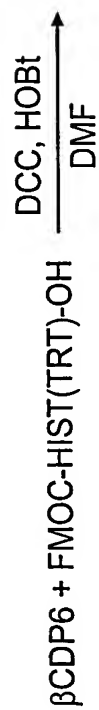


FIG. 29

pH-SENSITIVE POLYMERS FOR ENDOSOMAL ESCAPE
SYNTHESIS OF SECONDARY AMINE CONTAINING POLYMERS

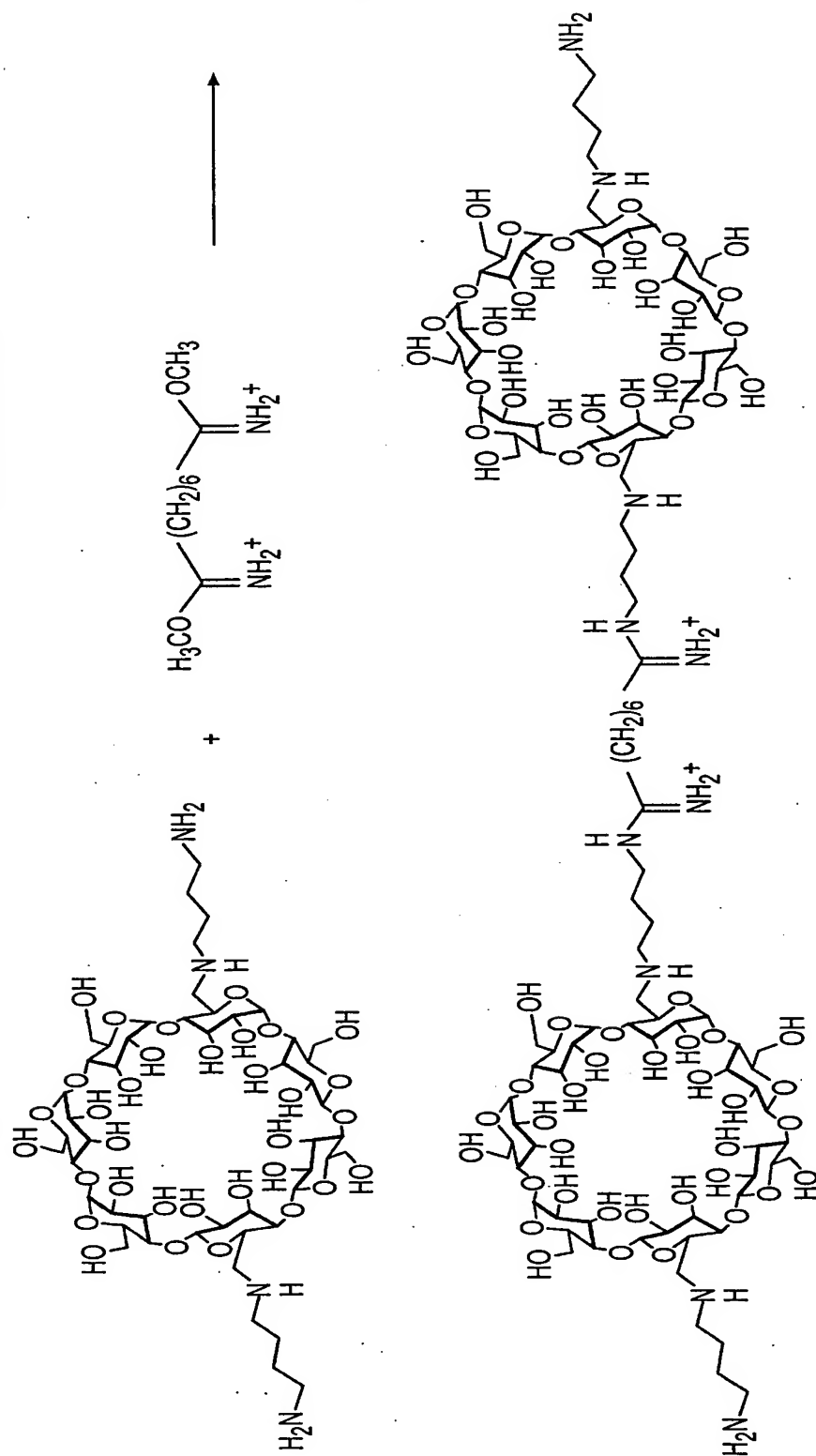


FIG. 30